CURRICULUM VITAE

Name: W. Robert S. Webber, Ph.D.

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Nationality: Naturalized US Citizen. (23957829 INS Reg # A40217082) Formally British.
Birth: 9th April 1952 Cairo, Egypt.

Marital Status: Married to the former Susan Rudnik, Two Children, Ben & Colin.

Education:

Ph.D. Biophysics (London)   1978-1982
    "Fluorophotometry & the study of Fluid Flow in Human Eyes"
St. Bartholomew's Medical College, London University, U.K.

M.Sc. Medical Electronics and Physics   1977-1978
St. Bartholomew's Medical College, London University, U.K.

B.A. (Hons) II Physics   1971-1974
St. Catherine's College, Oxford University, U.K.
    Special Subjects: Electronics, Solid State Physics.

Appointments: Research Associate, Dept Neurology, School of Medicine   1991
    Johns Hopkins University School of Medicine

Courses:

GUI Design	(1 week)	1994
Neural Networks	(2 Days)	1988
iRMX 86 Operating System	(1 week)	1985
PDP MACRO 11 Assembler (1 week)		1976

Professional Organization Membership and Activities:

Chapter Chairman Baltimore Section 1989
Engineering in Medicine and Biology (IEEE)

The Institute of Electrical and 1989
Electronics Engineers (IEEE) U.S.A.

Chartered Electrical Engineer (Corporate Member) 1986-2001
The Institute of Electrical Engineers (IEE) U.K.

Grants:
"High Frequency Study of Cortical EEG" July 1990 - June 1991
American Epilepsy Society Research Grant $25K 1 Year

"An Integrated Algorithmic & Neural Network Approach for Detection of Epileptiform Activity"
Whitaker Foundation $180K 3 Year Aug 1991 - July 1994

Awards:
Exhibition to St Cartherine's College, Oxford U.K. 1971
Industrial Scholarship British Nuclear Fuels Ltd 1971

Ad hoc reviewer for: Electroencephalography & Clinical Neurophysiology, Journal of Clinical Neurophysiology, Thermology, IEEE Transactions on Biomedical Engineering.

Consultancy:
Bio-Logic Systems Corp. 1992-

Software Experience:
Systems: UNIX, DOS, OS/2 Warp, Windows 3.1 Windows9x, Windows NT4.0, Noveli Netware 3.12, to 5.1
Languages: AWK, BASIC, 'C', HTML, Java Script, Pascal, Perl, Powerbuilder
Assemblers: Z80, 68HC11, TMS9900, 8086, 68020

Work Experience:

Dept Neurosciences, Johns Hopkins Hospital. Baltimore MD 1987-

Created web page for tracking status of patients reports, file server space usage. This web page is dynamically updated by 4 robot programs writen in 'C', AWK and Perl.
Responsible for all computer based systems for managing, archiving digital EEG data at Johns Hopkins Hospital. This includes one internally developed system, and 3 commercial system, including Novell file servers.

Responsible for system design, both H/W, S/W and coding in 'C' for computer systems to collect, analyze and display patient EEG data both on and off line. The System included 5 dual processor computers (68020 UNIX System 5 / pSOS Real time executive). The EEG review machine was PC-AT running MS DOS and connected by Ethernet. The system ran for 8 years with out loosing a single patient file due to software errors. Software developed included acquisition, analysis, archive and review programs complete with menu based user interface. The system included an automatic, unsupervised, reliable, fail safe file transfer over the Ethernet between DOS and UNIX system components.

Designed a reliable Novell network for EEG storage and review with automatic status tracking of EEG work flow. All status reports presented as Web pages and built dynamically by robots. Managed a team of up to three programmers for these various projects.

Research activities:
Lead author on 3 peer review papers on neural network based online spikes and seizure detection for EEG.

Amtote Systems. General Instrument, Hunt Valley, MD.   1986-1987

Programming real time, wagering systems having up to 1000 terminals and transaction rates of 200/sec. These systems use an in house proprietary language and operating system.

Sira, South Hill Chislehurst, Kent BR7 5EH U.K.   1982-1986

Project leader: Principal designer for team of two additional engineers that developed microprocessor based broad band, Thermo Elastic Stress measuring instrument that is marketed world wide. This Instrument uses Intel 8086, PL/M86 Language, iRMX o/s, real time FFT analysis, Color Graphics, ADCs, DACs and a proprietary Infra-red Optical Head. Dealt with various analog circuit problems and new designs for Infra-red detector pre-amps and anti-alias filters.

Designed, coded, debugged microprocessor hardware and assembler software for Z80, 8085, Texas 9989. Applications included Floppy disk Device driver in 'C' for Intel 8272 and various Satellite projects requiring hardware design and real time communications software. Applications programs in 'C', Pascal, PL/M86 and Basic under RSX-11M, iRMX86, and PDOS operating systems.

St. Bartholomew's Medical College, London   1977-1982

Ph.D. involved building the electronic instrumentation to measure fluid movement in human eyes. This required redesign of Analog Phase Sensitive detector circuits and phase meter electronics. Taught practical electronics on the M.Sc. course. Bought and assembled a Z80 microcomputer to learn BASIC, assembly programming, and analyze experimental results. Devised a new, reliable method of measuring human basal tear turnover rate.

M.Sc. Built a Laser Doppler Velocimeter, including analog pre-amp and narrow band filter for electrophoresis measurements on red blood cells.

Seismograph Services, Holwood Keston, Kent, U.K.   1976-1977

Assistant Field Seismologist: Responsible for field cable laying crew of 30, seismographic data collection equipment, operations and repair, and disposal of dynamite. Raised sufficient funds to move into Biomedical Engineering.

Plessey Radar, Addlestone, Surrey, U.K.   1974-1976
Assistant Electronics Engineer: Working in digital logic design team on serial communication hardware. After promotion to Engineer, worked with one subordinate on analog video processing for image analysis.

Patents

1. Automatic detection of seizures using electroencephalographic signals
Olsen DE, Lesser RP, Harris JC, Webber WRS, Cristion JA
US Patent Number: 5,311,876 May 17, 1994

2. Technique for using heat flow management to treat brain disorders
Lesser RP, Webber WRS
US Patent Number 6,248,126 June 19, 2001

Publications

1. Webber WRS, Jones DP, Smith AT, Lloyd-Jones D, Wright P.
A solid state detection system for use in fluorophotometry in Ophthalmology.
Proceedings of the Biological Engineering Society 20th
Anniversary International Conference. pp 293-295 1980

2. Webber WRS
Fluorophotometry and the Study of Fluid Flow in Human Eyes. Ph.D. Thesis. 1982
The Royal Hospital of St. Batholomew's Medical College London University, U.K.

3. Jones DP, Webber WRS, Smith AT, Lloyd-Jones D.
Ophthalmic fluorophotometer: A new solid state fluorophotometer.
Journal of Biomedical Engineering 4:113-117. 1982

4. Butrous GS, Male JC, Webber WRS, Barton DG, Meldrum SJ, Bonnel JS, Camm AJ.
The effect of power frequency high intensity electric fields on implanted cardiac pacemakers.
PACE, 6:1281-1292 1983

5. Webber WRS, Jones DP, Wright P.
Measurement of tear turnover in normal healthy persons by
fluorophotometry suggest a circadian rhythm.
IRCS Journal of Medical Science 12(8):683-684. 1984

6. Webber WRS, Jones DP.
A continuous fluorophotmetric method of measuring tear turnover rate in humans and an analysis of factors affecting accuracy.
Medical and Biological Engineering and Computing. 24:386-392 1986

7. Webber WRS, Jones DP, Wright P.
Fluorophotometric measurements of tear turnover rate in normal healthy persons: Evidence for a circadian rhythm.
EYE 1(1):615-620 1987

8. Gordon G, Lesser RP, Rance NE, Hart J, Webber WRS, Uematsu S, Fisher RS.
Parameters for direct cortical electrical stimulation in the human: Histopathologic verification.
Electroencephalography and Clinical Neurophysiology 75:371-377 1990

9. Uematsu S, Lesser RP, Fisher RS, Gordon B, Krauss GL, Vining EP, Webber WRS.
Motor and Sensory Cortex in Humans: Topography Studied with Chronic Subdural Stimulation
Journal of Neurosurgery 31(1):59-72 1992

10. Lesser RP, Webber WRS, Fisher RS.
Design Principles for Computerized EEG Monitoring
Electroencephalography and Clinical Neurophysiology 82: 239-247 1992

11. Fisher RS Webber WRS Lesser RP Arroyo S Uematsu S.
High Frequency EEG Activity at the Start of Seizures
Journal of Clinical Neurophysiology 9(3): 441-448 1992

12. Webber WRS, Litt B, Lesser RP, Fisher RS, Bankman I,
Automatic Spike Detection: What Should the Computer Imitate?
Electroenceph. clin Neurophysiol 87: 364-377 1993

13. Arroyo S, Lesser RP, Gordon B, Uematsu S, Jackson D, Webber WRS,
Functional significance of the mu rhythm of human cortex: an electrophysiologic study with subdural electrodes
Electroencephalography and Clinical Neurophysiology 87: 76-87 1993

14. Webber WRS, Litt B, Wilson K, Lesser RP,
Practical Detection of Epileptiform Discharges (EDs) in the EEG using an Artificial Neural Network: A Comparison of Raw and Parameterized EEG Data.
Electroenceph. clin Neurophysiol 91: 194-204 1994

15. Arroyo S, Lesser RP, Fisher RS, Vining EP, Krauss GL, Bandeen-Roche K, Hart J, Gordon B, Uematsu S, Webber R.
Clinical and electroencephalographic evidence for sites of origin of seizures with diffuse electrodecremental pattern.
Epilepsia. 35:974-87. (1994)

16. Webber WRS, Richardson RT, Wilson K, Lesser RP,
An Approach to Seizure Detection using an Artificial Neural Network (ANN)
Electroenceph. clin Neurophysiol 98:250-272 (1996)

17. Arroyo S, Lesser RP, Poon WT, Webber WR, Gordon B.

Neuronal generators of visual evoked potentials in humans: visual processing in the human cortex.
Epilepsia. 38:600-10. (1997)

18. Klatchko A; Raviv G; Webber WRS; Lesser RP
Enhancing the Detection of Seizures with a Clustering Algorithm
Electroenceph.clin.Neurophysiol. 106:52-63 (1998)

19. Lesser RP; Kim SH; Beyderman L; Miglioretti DL; Webber WRS; Bare M;
Cysyk B; Krauss GL; Gordon B
Brief bursts of pulse stimulation terminate afterdischarges caused by cortical stimulation
Neurology 53:2073-2080 (1999)

20. Sepkuty JP, Lesser RP, Civelek CA, Cysyk B, Webber R, Shipley R.
An automated injection system (with patient selection) for SPECT imaging in seizure localization.
Neurology 53:2073-81. (1999)

21. Lesser RP, Webber WR.
Detection of epileptiform activity using artificial neural networks.
Adv. Neurol. 84:307-15. (2000) Review.

22. Mizuno-Matsumoto Y; Motamedi GK; M.D. Webber WRS; Lesser RP;
Wavelet-Crosscorrelation Analysis can help Predict whether Bursts of Pulse Stimulation will Terminate
Afterdischarges
Journal Clinical Neurophysiology 113:33-42 (2002)

Book Chapters

1. Lesser RP, Webber WRS, and Fisher RS.
Principles of Computerized Epilepsy Monitoring and Digitized (Paperless) EEG.
In: E. Niedermeyer and F. Lopes da Silva (Eds.), Electroencephalography. Basic Principles, Clinical Applications and Related Fields. 3rd Ed Baltimore, Williams & Wilkins. 1993

2. Krauss GL, Webber WRS
Digital EEG.
In: E. Niedermeyer and F. Lopes da Silva (Eds.), Electroencephalography. Basic Principles, Clinical Applications and Related Fields. 4th Ed Baltimore, Williams & Wilkins. 1999

3. Lesser RP, Webber WRS
Principles of Computerized Epilepsy Monitoring
In: E. Niedermeyer and F. Lopes da Silva (Eds.), Electroencephalography. Basic Principles, Clinical Applications and Related Fields. 4th Ed Baltimore, Williams & Wilkins. 1999